### (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 3 March 2005 (03.03.2005)

**PCT** 

### (10) International Publication Number WO 2005/018736 A2

(51) International Patent Classification7:

**A61N** 

(21) International Application Number:

PCT/US2004/027116

(22) International Filing Date: 20 August 2004 (20.08.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/496,474

20 August 2003 (20.08.2003)

- (71) Applicant (for all designated States except US): INTER-NATIONAL BRACHYTHERAPY, S.A. [BE/BE]; Zone Industrielle C, B-7180 Seneffe (BE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): RUSSELL, John, L., Jr. [US/US]; 6000 Live Oak Parkway, Norcross, GA 30093 (US). CARDEN, John, L., Jr. [US/BE]; Zone Industrielle C, B-7180 Seneffe (BE). CONIGLIONE, Roy [US/BE]; Zone Industrielle C, B-7180 Seneffe (BE). MOYAUX, Dominique [BE/BE]; Zone Industrielle C, B-7180 Seneffe (BE).
- (74) Agent: ELMAN, Gerry, J.; Elman Technology Law, P,C., P.O. Box 209, Swarthmore, PA 19081-0209 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### **Published:**

without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PLASTIC BRACHYTHERAPY SOURCES

(57) Abstract: An implantable source (40) of therapeutic radiation for brachytherapy is provided as a sealed, biocompatible capsule (410) of plastic (e.g. polyethylene or PEEK) transparent to the radiation. The capsule contains a radiation source (400) comprising particles of a radioactive isotope (e.g. Pd103, I125, Cs131) in a fluid carrier that is resistant to radiation polymerization but solidifies at elevated temperature. It also has a marker (420), and desirably has a socket (430) which accommodates attaching spacers (660) and makes possible linear strands and planar arrays of the capsules. The spacers may be functional, e.g. heat-generating or medicationreleasing.



## (19) World Intellectual Property Organization

International Bureau



# 

(43) International Publication Date 3 March 2005 (03.03.2005)

### **PCT**

# (10) International Publication Number WO 2005/018736 A3

(51) International Patent Classification7:

A61N 5/00

(21) International Application Number:

PCT/US2004/027116

(22) International Filing Date: 20 August 2004 (20.08.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/496,474

20 August 2003 (20.08.2003) US

- (71) Applicant (for all designated States except US): INTER-NATIONAL BRACHYTHERAPY, S.A. [BE/BE]; Zone Industrielle C, B-7180 Seneffe (BE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): RUSSELL, John, L., Jr. [US/US]; 6000 Live Oak Parkway, Norcross, GA 30093 (US). CARDEN, John, L., Jr. [US/BE]; Zone Industrielle C, B-7180 Seneffe (BE). CONIGLIONE, Roy [US/BE]; Zone Industrielle C, B-7180 Seneffe (BE). MOYAUX, Dominique [BE/BE]; Zone Industrielle C, B-7180 Seneffe (BE).
- (74) Agent: ELMAN, Gerry, J.; Elman Technology Law, P,C., P.O. Box 209, Swarthmore, PA 19081-0209 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

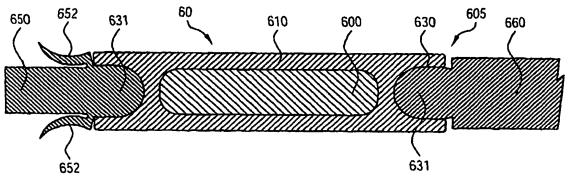
### Published:

with international search report

(88) Date of publication of the international search report: 21 July 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PLASTIC BRACHYTHERAPY SOURCES



(57) Abstract: An implantable source (40) of therapeutic radiation for brachytherapy is provided as a sealed, biocompatible capsule (410) of plastic (e.g. polyethylene or PEEK) transparent to the radiation. The capsule contains a radiation source (400) comprising particles of a radioactive isotope (e.g. Pd<sup>103</sup>, I<sup>125</sup>, Cs<sup>131</sup>) in a fluid carrier that is resistant to radiation polymerization but solidifies at elevated temperature. It also has a marker (420), and desirably has a socket (430)which accommodates attaching spacers (660) and makes possible linear strands and planar arrays of the capsules. The spacers may be functional, e.g. heat-generating or medication-releasing.

